ISO 14001:2004
Environmental Management System (EMS) Assessment

Organization Assessed: Brookhaven National Laboratory (BNL)

Location: Upton, NY

Scope: Competence, training & awareness, Communication, EMS Documentation, Control of documents, Operational control, Emergency preparedness and response. Line organizations that were the focus of this assessment (in addition to follow-up evaluation of the institutional program) included:

- Nuclear and Particle Physics: C-AD, Superconducting Magnet, Instrumentation, Physics
- Basic Energy Sciences: Chemistry, Condensed Matter Physics & Material Science (CMPMSD), Center for Functional Nanomaterials (CFN)
- Light Source (NSLS I. NSLS II is still in design mode.)
- Life Sciences: Biology, Medical, NASA operations
- EENS: Environmental Sciences Department, Energy Sciences and Technology Department, Nonproliferation and National Security Department
- F&O: Plant Engineering, Safeguards & Security, Central Fabrication Services, Emergency Services, Staff Services
- Environmental Restoration
- ES&H / Directors Office - All of ESH and Balance of Plant (primarily CEGPA, Quality Management Office and Information Technology Division)

Audit Plan: ISO 14001 Assessment of BNL, 2008 EMS Final Audit Plan, Rev.0, 01/16/08

Organization Point of Contact for Assessment: John Selva, Environmental & Waste Management Services Division, Field Services Supervisor/EMS Program Manager, Brookhaven National Lab, PO Box 5000, Upton, NY 11973. Phone: (631) 344-8611, FAX (631) 344-3223. E-mail: selva@bnl.gov

Dates of Record Review*:* Week of February 5, 2008

Dates of Onsite Evaluation: February 11 – 15, 2008

Lead Assessor: Elizabeth A. Zimmerman, Lead (EMS), EMS-A Certified Auditor, RABQSA International (EMS-#E052181), Certified Environmental Professional, Academy of Board Certified Environmental Professionals (#379) Pacific Northwest National Laboratory, ESHQ, Richland, WA; Mailing Address: 15 Shaw Road, Woodstock Valley, CT 06282-2623, Phone: (860) 974-3020 Fax: (860) 974-3020 (call first), E-mail: Elizabeth.zimmerman@pnl.gov

Assessor: David Skipper, Completed ISO 14001:2004 EMS Lead Auditor Training
ORNL, Environmental Protection & Waste Services, Bethel Valley Road, PO Box 2008 MS 6395, Oak Ridge, TN 37831, Phone: (865) 576-5748, Fax: (865) 576-6196
Email: skipperdd@ornl.gov

Report Distribution:

- **Draft**: To be determined by BNL – recommend distribution to parties affected by findings and EMS Management Representative
- **Final**: Recommended distribution to environmental protection program managers, ESHQ Managers, Management System Owners, line organizations affected by findings (including noteworthy practices); Executive Summary to Level 1's and 2's, make full report available online.

Status of Assessment Report:

- _ Draft for review and comment Date 03/04/08 Revision Number: 0
- X Final Date: 03/17/08 Revision Number: 0

AUDIT PROCESS

The **2007** internal assessment was a complete audit of all 18 ISO 14001:2004 elements, and was combined with an OSHAS review.

This **2008** internal assessment focused on five elements of the EMS. The elements selected for review by BNL were: Communication, EMS Documentation, Control of documents, Operational control, Emergency preparedness and response. A partial assessment was done of Competence, training & awareness due to its connection with communication and operational control elements.

The majority of the assessor's time was spent out in the field on walkarounds and conducting interviews of approximately 75 individuals. Organizations assessed included:

The audit focused on visits to the CFN, NSLS. Steam Plant, Sewage Treatment Plant, 244, 422, 463, 480, 490, 510, 535, 555, 701, 815, 855, 911, Madame Curie dormitory, and various office buildings. More than 117 documents and websites were reviewed.

Overall Conclusion: Based on the review and areas assessed, it appears that BNL's EMS is strong, effective and among the "best in class," with a few spotty problems and vulnerabilities, which are described below.

Major Nonconformities: None identified
Minor Nonconformities: 3 identified: 1 for Document Control, 2 for Operational Control
Observations: 10
Opportunities for Improvement: 12
Noteworthy Practices: 32

Environmental Management System Model			**IMPLEMENTATION AND OPERATION**	
ELEMENT:	4.4.2	**TITLE:**	*Competence, Training and Awareness (PARTIAL)*	**Assessor**: Zimmerman, Skipper

ISO 14001 STANDARD:		**YES**	**PARTIAL**	**NO**
The organization shall **ensure that any person(s) performing** tasks **for it or on its behalf that have the potential** to cause a significant environmental impact(s) **identified by the organization** is (are) competent on the basis of appropriate education, training or experience, and **shall retain associated records**.				
The organization shall identify training needs **associated with its environmental aspects and its EMS**. It shall provide training **or take other action to meet these needs,** and shall retain associated records.		X		
The organization shall establish, **implement** and maintain a procedure(s) to **persons working for it or on its behalf** aware of				
a) the importance of conformity with the environmental policy and procedures and with the requirements of the EMS;	a)			
b) the significant environmental impacts **and related** actual or potential impacts associated with their work, and the environmental benefits of improved personal performance;	b)	X		
c) their roles and responsibilities in achieving conformity with the requirements of the EMS, and	c)	X		
d) the potential consequences of departure from specified operating procedures.	d)			

IMPLEMENTATION OF STANDARD:
Discussion: Environmental and Waste Management Services (EWMS) conducted an internal assessment of compliance with Suffolk County Article 12 tank requirements. The assessment determined that some tank inspections were not being conducted in accordance with requirements. As part of the corrective/preventive action, remedial on the job training was conducted. However, it was not assigned a course code, associated with a Job Training Analysis for personnel who should have such training, or tracked in the Battelle Training Management System (BTMS). Without these measures, a new person assigned this

responsibility would not necessarily receive the training, and the problem could recur.

NSLS I requires users of nanomaterial hoods to read and sign off on procedure LS-ESH-051, Operation of Nano-material Hood in Room 1-128. Signoffs are tracked in BTMS.

During a visit to the Occupational Medicine Clinic, it was noted that since February 2006, no new employees had signed off as having read the Occupational Medicine Policies and Procedure Manual. Completion of the read and sign is also not tracked as on the job training in BTMS.

BNL recently revised the Work Planning and Control Subject Area, and has provided training to Work Control Coordinators. The training focuses on safety, and does not contain much in the way of explicit information or examples associated with environmental protection/compliance requirements.

The Environmental Restoration program has developed specialized General Employee Training (GET-ERP) for workers. It includes a slide on the responsibilities of Field Engineers, but did not their mention environmental compliance responsibilities (this has since been addressed.)

Observations:

1. 'Remedial' on the job training for inspecting regulated tanks was delivered, but was not assigned a course code or tracked in BTMS.
2. Occupational Medicine Clinic employees hired after 02/06/06 have apparently not signed off as reviewing the Occupational Medicine Procedures and Policy Manual and procedures, and this training is not tracked in BTMS.

Opportunities for Improvement:

1. As appropriate, add environmental material (e.g., examples) to Work Control Coordinator training.
2. Add Field Engineer environmental responsibilities to Environmental Restoration General Employee Training (GET-ERP) for workers. (Complete)

Noteworthy Practices:

1. BTMS makes it easy to evaluate the status of required training for any individual. Many organizations like NSLS I and F&O are tracking on the job training in BTMS. The system also tracks the status of required professional certifications like those for wastewater treatment operators. Random checks did not reveal any out of date required environmental training.
2. NSLS I has developed concise, informative read and sign training.
3. Several organizations (CMPMSD, NSLS II) have developed good one page summaries of "rules everyone should know." Note: Consider adding a note on discharges to drain prohibitions if it is not already covered.

EXISTING PROCEDURES AND DOCUMENTATION REVIEWED:

- EWMSD Meeting Attendees list, ECR/SME Spill Training, 02/06/08
- BNL Occupational Medicine Clinic Signature Acknowledgement List, created on 12/3/02, with most recent signature being Jennifer Gatz, 02/06/06
- Training record for Ronal Prwivo, Life No. 21920 (waste management technician), from BTMS
- Training requirements for Newton, Scott, Sewage Treatment Operator, from BTMS
- CBT slides for GET-ERP, Environmental Compliance
- Read and Sign, BNL NSLS Nano-Material Hood Operations (for NSLS Procedure LS-ESH-0051), signed 11/16/07
- NSLS II ESH Briefing for Building 817, LT-ESH-LTSTAFF-817, Rev. 10/25/07
- Job Specific Environmental Awareness Training – Machine Shop Operations, LS-ENV-SHOP, LS-TRN-CRF-0009, 12/20/07
- Job Specific Environmental Awareness Training – Photographic Darkroom Operations, LS-ENV-Photo, LS-TRN-CRF-0007, 12/20/07

Environmental Management System Model			**IMPLEMENTATION AND OPERATION**		
ELEMENT:	4.4.3	**TITLE:**	*Communication*	**Assessor**: Zimmerman/Skipper	
ISO 14001 STANDARD:				**YES**	**PARTIAL**	**NO**

With regard to its environmental aspects and EMS, the organization shall establish, **implement** and maintain a procedure(s) for: a) internal communication between the various levels and functions of the organization; b) receiving, documenting and responding to relevant communication from external interested parties.	X		
The organization shall **decide** whether to externally communicate about its significant environmental aspects, and shall document its decision.	X		
If the decision is to communicate, the organization shall establish and implement a method(s) for this external communication.	X		

IMPLEMENTATION OF STANDARD:
Conclusion: BNL has a strong, mature communication program. There are many examples of explicit, EMS related communications using a variety of mechanisms. There is recognition that email has limited effectiveness as a communication tool. The management team (Aronson, Gibbs, Bebon) is regularly communicating the importance of operational excellence to the line.

Discussion: The BNL EMS effectively uses a wide variety of internal and external communication methods. The EMS Program Description notes the following examples of various channels available for communicating environmental issues:

- Routine management meetings, including the Integration Council, Science Council, and Operations Council.
- Environmental support organizations' direct communiqués with department and division staff on specific environmental issues.
- BNL publications, such as the Brookhaven Bulletin, Monday Morning Memo, ESSH Monthly Summary, and use of the BNL World Wide Web page, including Web Pages focused on environmental topics, such as http://www.bnl.gov/bnlweb/envindex.html. (Note: this page now redirects to http://www.bnl.gov/bnlweb/eshindex.asp, so the address could be changed.)
- An ES&H Hot Line allows staff, visiting scientists or contractors to express concerns or ask questions regarding ES&H issues at the site.
- The SBMS subscription service for notifying line personnel of new or revised environmental program requirements.

In addition to lab level communications, evidence was seen that each organization communicates internally on environmental matters. There are frequent communications from EMS representative and environmental compliance representatives, and several noteworthy examples of proactive communication including:

- a Life Sciences ALD email to all staff on FY08 EMS objectives and targets
- the F&O ESH concern form, and
- establishment of a user research support group in Life Sciences to assist NASA staff conducting research at BNL.

The SBMS subscription service is a convenient, automated tool to notify staff of changes to Subject Areas, etc., relevant to their work. Notices were informative, providing specifics to staff about changes. However, the service is not widely subscribed to. (See Observation below.) Subscriptions are not automatic or 'forced' by job assignment.

- Out of ~2700 employees, only 485 were subscribed to anything in SBMS (e.g., at least one subject area).
- Out of 567 people required to take hazardous waste generator training, 105 have subscribed to the Managing Hazardous Waste subject area.
- Two ECRs (including one who is new) were not subscribed to Managing Hazardous Waste. (This has been addressed.)

Some key operations staff do voluntarily subscribe to everything, and then filter and channel information out to affected staff (e.g., via email/staff meetings/training). In addition to the Subscription Service, broadcast emails are used for new subject areas and significant changes. SBMS staff indicated that implementation plans, which may include training, are now required for significant changes to Subject Areas. [Note: at ORNL, staff with certain roles and responsibilities are automatically subscribed to specific management system SBMS documents. For example, ECRs automatically receive all EMS-related SBMS changes/new documents which ensures that any changes or new requirements are communicated to each organization. About 150 people are "force subscribed" to all EMS-related SBMS documents.]

The main portal into SBMS Subject Areas is an alphabetic index (note: there is also a search function.) The listings are by Subject Area title; thus the medical waste subject area is listed under "R" (since the title of the subject area is Regulated Medical Waste.) There is a category under "I" for interim procedures, but the titles of those procedures are not listed in the main index.

BSA has continued their commitment to maintaining a positive, proactive, and constructive relationship with its stakeholders and to communicating openly on its significant environmental aspects, via mechanisms such as routine meetings with stakeholder groups including the DOE, Community Advisory Council (CAC), and/or the Brookhaven Executive Roundtable (BER).

The Correspondence and Commitment Tracking (CCTS) Subject Area describes how official correspondence and requests for information on environmental issues from stakeholders are controlled and coordinated. It provides a mechanism to inform parties, and track a response to closure. It also helps ensure a coordinated, efficient response. Although there were examples of usage, it appears that the system may only be used sporadically. The Environmental Restoration Program has a communications procedure, but it does not reference CCTS. Also, there may be some confusion about whether to enter informal external environmental inquiries into the system (see Observation below). An 1/08 external environmental inquiry received by the groundwater group was documented (via email) and responded to, and parties (including Communications staff and management)

were informed via email, but the inquiry was not tracked in CCTS.

Significant environmental aspects are communicated to external parties primarily through the Site Environmental Report, although this is not noted in the Program Description (see Opportunity for Improvement below.)

NSLS II management has issued their own "Environment, Safety, and Health Policy." However, there is already a Lab-wide policy. The memo could reference this policy, and then articulate NSLS II's management expectations.

NSLS II is under design review. As part of this review, applicable requirements must be identified. The design documents have undergone review by Environmental Subject Matter Experts, and good comments and recommendations were received. Comments and their resolution are tracked by O. Dyling, but commenters are not notified of specifically how their comments were resolved. Such notification would close the feedback loop, encourage additional comments, and allow an opportunity for clarification of the original comments, and verification that the comment was addressed to the commenter's satisfaction.

The BNL culture has a number of committees aimed at involving affected staff/managers in decision making, and achieving consensus. However, consensus may not be required for all solutions. While committees can often improve the decision making process and product by establishing broad-based consensus, at other times they can slow things down or dilute solutions, making the results less useful and clear. In some cases, in an effort to allow flexibility, or when consensus can not be achieved, committees may recommend requirements that are open-ended. (See related finding from the 2007 DOE HS-64 inspection "*The laboratory has not fully established clear, adequate and consistent requirements.*") In many cases, subject matter experts can be empowered to develop requirements and implement actions (with appropriate management approval) without obtaining full concurrence from all affected parties. See Opportunity for Improvement below.

Observation: The Correspondence and Commitment Tracking Subject Area is unclear as to whether external environmental inquiries received informally (e.g., through a phone call) are required to be entered into the Correspondence and Commitment Tracking System. It is not clear that the system is being routinely used as required.

Opportunities for Improvement:

1. The SBMS subscription service is not widely used.

2. Facilitate access to information:
   - Expand SBMS index (e.g., list Hazardous Waste Management under the letters H and W; Regulated Medical Waste under M and W; include titles of interim procedures)
   - Provide a link from EWMSD home page to reporting of environmental concerns/pollution prevention suggestions (there is already a link on the ESSH home page).
   - Clarify in the Site Environmental Report that listed aspects are significant, and cross reference the list of aspects in Table 2-1 in Section 2.3.1 in the narrative.
   - Expand the link to "safety" on NSLS I web site to include the environment. (Complete)
   - The webpage focused on environmental topics (http://www.bnl.gov/bnlweb/envindex.html) now redirects to http://www.bnl.gov/bnlweb/eshindex.asp, so the address could be changed in the EMS Program Description during the next update.

3. NSLS II ESSH Policy - consider changing word "policy" to "expectations" or "commitments," and then expounding on management expectations as they relate to NSLS II.

4. Share information on NSLS II comment resolution with commenters, to close the feedback loop.

5. Committees are most useful when they are effective, have a clear charter, have the right people actively and regularly involved, move forward decisively with value-added solutions, grant the appropriate level of authority to subject matter experts, and there is a clear decision maker. Proceed with planned efforts to evaluate mission, focus and need for various existing committees.

6. Consider adding language to EMS Program Description stating that significant environmental aspects are communicated to external parties primarily via the Site Environmental Report.

Noteworthy Practices:

RAISING AWARENESS AND ENCOURAGING DIALOGUE

1. BNL has a "best in class" set of Earth Day activities, including a "Pledge Tree" that promotes engagement and involvement and raises money that is donated to an environmental cause. The Pledge Tree is one of the most innovative

and clever activities the Audit Team Lead has ever seen.

2. A discussion of ESH issues associated with nanomaterials was held at a CAC meeting (10/11/07). The meeting was held at CFN, and included a facility tour.

3. The Life Sciences NASA research support group mentors 500+ users each year.

4. The BES Associate Laboratory Director sent out an email to all directorate staff communicating the FY08 EMS objectives/targets and asking for their support and comments.

5. F&O has implemented an ESH concerns form that can be filled out anonymously. Concerns are documented and follow up is tracked.

6. The Annual Laboratory Plan and associated performance summaries communicate priorities (including environmental and emergency management) simply and clearly.

7. The Lab level EMS Management Review was logical, structured, discriminated on issues, and risk oriented. Unlike ORNL, PNNL, and INL, BNL also does organization-level Management Reviews, which help inform and engage mid-level management.

8. Some organizations are trending Tier I and waste generation data (NSLS I).

9. The CAC continues to be a valuable forum with knowledgeable stakeholders.

10. BNL held a brown bag on plans to addle Canada Geese eggs to control populations of resident geese. This demonstrates the lab has the courage to work through difficult and somewhat controversial communication issues associated with geese (and deer) population control.

11. Groundwater functions for compliance and remediation have been fully integrated.

12. The Environmental Restoration program has developed a procedure (1.10) on Communications Formality. NOTE: The procedure does not mention CCTS, but will be revised to include it.

13. In pre-bid meetings with contractors, ER management emphasized the importance of work planning and control. They have also incentivized waste reduction (e.g., reduction of waste graphite packages). The BGRR contractor will be re-using contaminated equipment.

EXISTING PROCEDURES AND DOCUMENTATION REVIEWED:

- SBMS Program Description, ISO 14001 Plus EMS, 7/31/01, reviewed 02/15/05
- SBMS Subject Area, Correspondence and Commitment Tracking, Rev. 1.6, 04/23/04
- Minutes of 2nd NSRL-08A Teleconference, 2/5/08
- LS ESH E-mail Newsletter, 2/08
- Email from SBMS subscription service to R. Colichio concerning revision to Confined Spaces subject area (email date 2/11/08)
- Community Advisory Council Meeting Agenda, 10/11/07
- Email from BES ALD to all staff communicating objectives and targets (2/6/08)
- C-A Operations Procedures Manual 1.10.3 "Guidance on Community Involvement" 7/31/06
- Email from Bob DiNardo to Instrumentation staff concerning EMS audit (2/7/08)
- Email from Bob DiNardo to Instrumentation staff concerning FY08 EMS objectives and targets
- FY2008 ESH Objectives and Targets, Final Rev.0, 8/29/07
- EMS Institutional –Level Management Review, 12/11/07 (PowerPoint slides)
- Letter from DOE to BNL, George Goode, RE: SCDHS October 2007 Inspection Results, 12/03/07, CC2008-3220
- Email from T Morrison to Subscription Service, RE: Subject Area, Hazardous Waste Management, 01/30/08
- Email from T Morrison to Subscription Service, RE: Subject Area, Environmental Assessments, 05/16/07
- List of Safety communications and community-engagement vehicles at BNL's institutional level (undated)
- PowerPoint Slides, Wildlife Management (deer, ticks, and geese) presentation to CAC by T Green, 05/10/07
- ESSH Monthly Summary, November 2007
- ESSH Monthly Summary, August 2007
- Memo from J Selva to M Beckman, RE: Anything for February Summary, 02/05/08
- http://intranet.bnl.gov/ESHQ/ESH_concerns.asp, 02/11/08
- Environment-related questions from Monday Memo (provided by P. Geiger)
- Annual Laboratory Plan, Rev.01/08
- The Bulletin, Vol.62, No.4
- ERP Operations Procedure Manual, 1.10 Communications Formality, 09/21/07
- NSLS II Review Comments, Nick Gmur, 19Sep2007, Responses (Casey, Dyling, Gmur) based on contents of 100% Title I document, 22Oct2007
- Memo from O Dyling to R Travis, J Durnan RE: Detailed Design Review Comments, 08/12/07
- Memo from O Dyling to SHSD Plan Review Coordinator, RE: Detailed Design Review Comments, 10/24/07
- NSLS-II Environment, Safety, and Health Policy, signed by Steve Dierker, 11/29/06
- From S Stein to distribution, RE: SBMS Internal Controlled Documents Implementation Plan, 08/28/06
- EENS FY08 ES&H Implementation Plan, Rev.0
- Annual Laboratory Plan (ALP), Performance Summary, June 2007 – September 2007
- Tips for Staying Safe This Winter, no date
- Printouts of people subscribed to Hazardous Waste Management Subject Area, 02/14/08

Environmental Management System Model			**IMPLEMENTATION AND OPERATION**		
ELEMENT:	4.4.4	**TITLE:**	*(EMS) Documentation*	**Assessor**: Zimmerman	

ISO 14001 STANDARD:	**YES**		**PARTIAL**	**NO**
The EMS documentation shall **include**:				
a) the environmental policy, objectives and targets,	a)	X		
b) **description of the scope of the EMS**,	b)	X		
c) description of the main elements of the EMS and their interaction, and reference to related documents,	c)	X		
d) documents, including records, required by this International Standard, and	d)	X		
e) **documents, including records, determined by the organization to be necessary to ensure the effective planning, operation and control of processes that relate to its significant environmental aspects.**	e)	X		

IMPLEMENTATION OF STANDARD:
Conclusion: Lab-level and organization-level EMS documentation (including EMS related subject areas) is generally complete and up-to-date.

Discussion: The ISO 14001 "Plus" EMS Manual describes the core elements of BNL's EMS and their interaction, provides direction to related documentation, and provides an overview of the services provided by environmental support organizations to line personnel to assist them in the execution of their environmental management responsibilities. These documents, and many other documents referenced in the manual, are available on BNL's SBMS, which is established and maintained as an on-line system. The remaining items are available as hard copy documents from the management system steward. The individual organizations at the Laboratory augment this manual with a description of their facility-level EMS implementation and related documents.

Each organization has an EMS description that includes the required information in 4.4.4 (a) – (e). These organization-level EMS descriptions have made effective use of links (such as to the BNL Policy). This minimizes the potential for conflicting information. Each organization assessed had a list of EMS objectives and targets and documents and records included in their EMS descriptions.

Note: BNL should continue efforts to integrate EMS and OHSAS documentation and programs, as appropriate (e.g. EENS and NSLS).

No findings.

EXISTING PROCEDURES AND DOCUMENTATION REVIEWED:

- SBMS Program Description, ISO 14001 Plus EMS, 7/31/01, reviewed 02/15/05
- LS EMS Description, Rev. 17, 12/12/07
- Draft NSRL Long Term Support Facility User Handbook
- LS FY08 Self Assessment Plan, 10/19/07
- LS Operational Support web page (accessed 2/7/08)
- Environmental Assessments and ESH Management Review, effective date 5/16/07
- LS Environmental Aspects Matrix, 1/20/08
- 2006 Site Environmental Report Summary
- Environmental Monitoring, effective date 12/11/07
- CMPMSD New Employee/Guest Orientation, 8/23/06
- BES ESH Mgt Review, 11/14/07
- C-A Operations Procedures Manual 13.4.2.b "List of C-AD and SMD Environmental Records", 6/06/05
- C-A Operations Procedures Manual 1.10.2.c "Collider-Accelerator and Superconducting Magnet Division EMS Document Flow-Down Matrix", 4/29/06
- C-A Operations Procedures Manual 14.1 "Environmental Management Program for Collider-Accelerator Department and Superconducting Magnet Division", 3/15/07
- Collider-Accelerator Division/Superconducting Magnet Division Environmental Management System and Occupational Health and Safety Management System Readiness Assessment (QA 2007-215), 5/2/07
- Collider-Accelerator Department/Superconducting Magnet Division Aspect Matrix, 11/19/07
- C-A Operations Procedures Manual 1.10.2.b "C-AD and SMD EMS Contacts and Responsibilities", 8/17/07
- C-AD/SMD Presentation, "FY08 OSH and E Improvement Actions, Objectives and Targets for C-AD/SMD", 12/10/07
- Physics Department Environmental Aspects, 2/14/08
- Instrumentation EMS Description, 5/21/07

Environmental Management System Model			**IMPLEMENTATION AND OPERATION**		
ELEMENT:	4.4.5	**TITLE:**	*Control of documents*	**Assessor**: Zimmerman/Skipper	
ISO 14001 STANDARD:				**YES**	**PARTIAL**	**NO**
Documents required by the EMS and by this International Standard shall be controlled. Records are a special type of document and shall be controlled in accordance with the requirements given in 4.5.4.						

The organization shall establish, implement and maintain a procedure(s) to a) approve documents for adequacy prior to issue, b) review and **update** as necessary and **reapprove** documents, c) ensure that **changes** and the **current revision status** of documents are identified, d) ensure that **relevant** versions of applicable documents are available at points of use, e) ensure that documents remain legible and readily identifiable, f) ensure that documents of external origin determined by the organization to be necessary for the planning and operation of the EMS are identified and their distribution controlled, and g) prevent the unintended use of obsolete documents and apply suitable identification to them if they are retained for **any** purpose.	a)		X	
	b)	X		
	c)		X	
	d)	X		
	e)	X		
	f)	X		
	g)		X	

IMPLEMENTATION OF STANDARD:

Conclusion: Control of documents online is working well, although access is a problem when computer systems are down, which happened several times during this internal assessment. On-going vigilance is needed for hard copies to ensure that only the most current copy is available for use.

Discussion: The Laboratory-Wide Procedures Subject Area identifies responsibilities and establishes controls for issuing, revising, and approving institutional level documents. The process for reviewing, revising, and approving facility level procedures is described in the Internal Controlled Documents Subject Area. Managers are responsible for ensuring accessibility of these controlled documents by staff who need them to conduct work. This is to be accomplished via an online delivery system, by placing a copy in a central workplace (such as a library), by several staff sharing a copy assigned to one staff member, or by assigning copies to all staff that use the controlled document.

BNL is storing many of its Laboratory-level documents in an online electronic format which is readily available to staff. The only official copy of these documents is the one online in SBMS. All SBMS documents (and many implementing procedures) have the following in the footer: *"The only official copy of this file is the one on-line in SBMS. Before using a printed copy, verify that it is the most current version by checking the effective date."* The revision history of each document is also stored electronically in SBMS in that document's "About" or "Revision History" file.

The SBMS procedure "Internal Controlled Documents" contains requirements for organization-level procedures, manuals, and plans. This procedure describes how documents are developed, reviewed, revised, distributed, and used. It also requires that documents of external origin that are necessary for the operation of a process or system be controlled.

During interviews at the Occupational Medicine Clinic, some computer systems were down, which prevented access to online versions of EMS-related documents and procedures. A hard copy notebook was located for review, but it contained an obsolete version of a procedure on medical waste (see Minor Nonconformity below.)

ESRs are key documents, and it is useful to have hard copies available in laboratories for reference and review by new researchers. However, during field visits and laboratory walkthroughs of EENS facilities, it was noted that a number of Experimental Safety Review (ESRs) forms kept in folders in individual laboratories were expired. In one case, an updated version had not been provided to the researcher. In most other cases, the documents were under review. Unexpected staff resource constraints interfered with timely review and re-issuance of the ESRs. A memo to file noted the impact of resource constraints on entries to the Tier 1 database, reviews of ESRs, and reviews of other documentation. Another memo was issued indicating that if the ESRs were not updated within 45 days of their expiration date, work would be suspended, but this was not implemented. It was not clear whether the reference to 45 days meant "calendar" or "working" days, but it is assumed it meant calendar days.

> Note: NLSL I has Operations staff check the currency of Safety Approval Forms (none checked during this EMS audit were out of date). Back in 1997, some Tier I findings associated with an experiment were not closed out after three notices. With the Chair's concurrence, the researcher was notified that his beamline would be shutdown in 24 hours if the situation was not rectified. There have been few problems since them. In another incident, a researcher's failure to address Tier I findings was factored into a negative performance appraisal.

Minor Nonconformity: An obsolete version of an Occupational Medicine Clinic Medical Waste procedure (dated 2002) was not removed from circulation.

Observation: A number of EENS Experimental Safety Review (ESR) hard copy forms reviewed in Laboratories had recently expired. In one case, an updated version had been provided to the researcher, but was not placed in the folder, despite an accompanying email advising them to replace the posted ESR with the revised Master Copy.

EXISTING PROCEDURES AND DOCUMENTATION REVIEWED:

- SBMS Subject Area, Internal Controlled Documents, Rev 5.0, 07/26/06
- SBMS Subject Area, SBMS Documents, Rev.4.2, 07/27/06
- Memo from RM Doty to Y Lee, Annual Review of ESR, dated 11/19/07
- ESR Form 03699Er4, expiration date 12/15/07
- ESR Review Number 16104E (revision 2), expiration date 12/15/07
- ESR Review Form No. ESR18406Pr5, expiration date 11/15/08
- ERS Review Form No. ESR9300Sr (version 2), expiration date 12/28/07
- ESR Review Form No. ESR9300Sr (version 2), expiration date 12/28/07
- ESR Review Form No. 15904Er1, expiration date 12/15/07
- ESR Review Form No. 16304N (revision 1), expiration date 8/30/08
- ESR Review Form No. 15704Er (rev.1), expiration date 12/4/07
- ESR Review Form No. 11601E, rev. 6/14/07
- ESR Review Form No. 09200ER2, expiration 8/22/07
- ESR Review Form No. 815E6, expiration 12/07
- Memo from RM Doty to A Rogers, RE: ESR 92, dated 02/13/08
- Memo from P Sullivan to A Rogers, RE: ESR review, dated 12/10/07
- Occupational Medicine Clinic – Policy and Procedure Manual, Chapter 7.5, Infection Control, Appendix 7, Regulated Medical Waste, No. IC-06.02/3 Handling & Disposal of Regulated Medical Waste, effective date 06/17/02
- BNL Occupational Medicine, Policy: Chapter 23 – Infection Control, Number 23, Rev.1, 06/20/07
- Occupational Medicine Clinic PPM, Chapter 7.5, Appendix 1, Bloodborne Pathogens Control Plan, 09/06
- BNL General Clinical Research Center Policy, IC-06.02, Handling & Disposal of Regulated Medical Waste, Rev.8, 02/01/08
- Memo from PT Sullivan to file, RE: Research Operations Office Staffing Issues, 12/10/07
- Safety Approval Form, Beamline X19c, ID 7204, expiration 09/05/08

Environmental Management System Model			**IMPLEMENTATION AND OPERATION**			
ELEMENT:	4.4.6	**TITLE:**	*Operational Control*	**Assessor**: Zimmerman/Skipper		
ISO 14001 STANDARD:				**YES**	**PARTIAL**	**NO**
The organization shall identify **and plan** those operations that are associated with the identified significant environmental aspects consistent with its policy, objectives and targets, in order to ensure that they are carried out under specified conditions, by:				X		
a) establishing, **implementing** and maintaining a documented procedure(s) to **control** situations where their absence could lead to deviation from the environmental policy, objectives and targets;				a)	X	
b) stipulating operating criteria in the procedure(s);				b) X		
c) establishing, **implementing** and maintaining procedures related to the **identified** significant environmental aspects of goods and services used by the organization and communicating applicable procedures and requirements to suppliers, including contractors.				c) X		

IMPLEMENTATION OF STANDARD:

Conclusion: Good environmental protection controls have been developed, and have generally been implemented with some spotty exceptions. (Note: See related finding "*Work is not consistently performed within established and required controls*" from the 2007 DOE HS-64 inspection of BNL's ES&H program). Controls for several vulnerabilities are less than adequate (see Minor Nonconformities.) (Note: See related finding "*The Laboratory has not fully established clear, adequate and consistent requirements*" from DOE HS-64 inspection.)

Discussion: As described under the Aspects element above, BNL has a process for identifying activities with significant

environmental aspects and impacts. The institutional-level SBMS subject areas contain performance standards, procedures and guidelines that are applicable Laboratory-wide. BNL has procedures (e.g., Work Planning and Control for Experiments and Operations and Process Assessment Subject Areas) for planning and conducting work, to ensure that environmental aspects and impacts are appropriately managed and adequate controls are implemented.

An estimated 75-80% of activities are worker planned, especially 'skill-of-the-craft' (e.g., by carpenters, plumbers, etc.) At the project level, project managers review work to identify the potential hazards and risks, conduct an assessment, and implement controls appropriate to the hazard. The hierarchy for controlling hazards first considers engineered controls, then administrative controls (such as operating procedures), and then personal protective equipment. Facility-specific procedures (referred to as Standard Operating Procedures, Implementing Procedures, or SEAPPMS) are developed as necessary to supplement the Lab-wide procedures.

Requirements for establishing and implementing operational controls for activities that can significantly impact the environment are documented in the section Establishing and Implementing Operational Controls in the Identification of Significant Environmental Aspects and Impacts Subject Area. BNL has taken a lead role in developing and implementing proactive ESH controls for work involving nanomaterials.

Communications with suppliers and contractors are conducted formally via contracting documents. The contract language defines responsibility and accountability for compliance to BNL environmental requirements, BNL expectations for ES&H performance, and guidance on purchasing environmentally preferable and recycled products. The system for identifying and communicating job specific requirements to contractors is described in the section Contractor/Vendor Training and Processing in the Training and Qualifications Subject Area. The procedure for this subject area requires contractors to attend the Contractor/Vendor Orientation course for generic ES&H requirements related to their job, plus facility-specific training, as required.

Numerous satellite and 90-day accumulation areas were inspected in LS, BES, F&O, NSLS I, EENS, Occupational Medicine, C-AD, Physics, and Instrumentation to evaluate implementation of hazardous waste management operational controls. Storage of hazardous and non-hazardous wastes in 855 was also evaluated. In general, these areas were well managed and met both regulatory and internal requirements. Exceptions are noted in the Minor Nonconformity below. Although the most recent RCRA inspection by the State did not identify any violations, there may still be a resource issue/vulnerability associated with having only 1.5 trained Waste Management Representatives matrixed out to the line. This number is considerably below similar waste management support staffing levels at INL, ORNL and PNNL.

Requirements for management of research samples have not been formalized. Several rusty containers of oil samples dated 1995 were being stored in a flammable storage cabinet. For samples stored in Building 815, there was no written inventory/data on contents/plan to disposition. (Note: A Tier I had been done in this building on 2/7/08). Inadequate labeling (e.g., samples from 1997 marked "Run #4) creates an opportunity for a "single point of failure" if only the researcher knows the contents. At Hanford and at BNL, improper management (including less than adequate labeling, storage and planning for disposition) and record keeping for archived samples has created ESH problems and resulted in significant costs for sampling and analysis (to support hazardous waste determinations.) [Note: PNNL has created a subject area on sample management.]

Minor Nonconformities:

1. Three failures to follow Hazardous Waste Management requirements were noted:
   - One container in the BES outside shed 90 day storage area was stored over 90 days (start date 8/16/07). The completed weekly checklist did not note that the container was stored over 90 days. Note: This container was moved to hazardous waste permitted storage area in 855 the day it was discovered.
   - The labels on three containers in the NSLS I 90 day storage area (all generated by one researcher) lacked an accumulation date. These items were apparently placed in the storage area after the weekly inspection. Note: The problem was detected on the next weekly inspection and corrected, and the researcher was notified of deficiency. NSLS I staff indicated they plan to start inspecting this area daily.
   - One container of nanomaterial waste in CFN was not closed. The Managing Hazardous Waste Subject Area requires that all nanomaterial waste be managed as hazardous waste, and containers must be closed except when waste is being added or removed.

2. There was one instance of conflicting requirements or procedures:
   - The Managing Hazardous Waste Subject Area (01/30/08 effective date) says "manage all nanomaterials as hazardous waste." The Interim Approach to Nanomaterial ESH Subject Area indicates that requirements for non-hazardous nanomaterial waste are contained in the industrial waste or rad waste subject area (07/31/07). Note: Delete reference to radioactive waste. If all nanomaterial is hazardous, then rad nano is a "mixed" waste.

Observations:

1. *Lack of systematic approach to manage vulnerability:*
   - There is no system/process for management of research samples.
   - Additional EMS information should be added to the Termination of Employment form (in Section 8 of Employment Subject Area). In addition, the form could be used for internal transfers as well as terminations. Suggested changes:
     - capture and arrange for transfer of key responsibilities/ownership (e.g., for systems, equipment requiring calibration, chemicals, building management, Local Emergency Coordinator, committees, updating of postings, conducting inspections, etc.)
     - require supervisor and operations (e.g., ECR/EMS Representative) sign off. Currently only the employee signs the form.
     - apply the process for long term guests and collaborators. Currently, the checklist apparently only applies to employees.
     - also use the checklist for transfers (from one building/organization to another).

2. *Inattention to Detail:*
   - a. An unlabelled container of liquid was in an EENS Flammable Storage cabinet in Building 851. Note: a Tier 1 was recently done in the same area. The item was believed to be soap.
   - A cardboard collection container (with a clear label above it indicating the container was for recycling cardboard) in NSLS I was filled with rugs, some Styrofoam and white paper. (The container was emptied that day to prevent more additions.)

3. The container label of a jug in the 90 day Occupational Medicine X-ray waste storage area in 490 indicated it was Non-hazardous Developer, in contrast to a handwritten marking that said "*Fixer*" (which is hazardous).

4. Some simple energy conservation measures have not been taken:
   - Motion detectors in Building 860 do not work, which results in a number of lights remaining on when the building is unoccupied.
   - In a hallway in Building 490, there was a large gap between two glass exterior doors right next to a ceiling heating vent.
   - Several Madam Curie Dormitory windows were left wide open in bathrooms, while interior temperatures were around 70 and exterior temperatures were in the teens.

5. In the Occupational Medicine X-ray waste 90-day storage area, two five gallon jugs were stored too close to each other to allow the labels on the containers to be read. Labels on some non-hazardous five gallon jugs in Blg. 855 were not clearly visible. (The containers can be moved, but they weigh 40-50 lbs., which poses a potential for back injuries.) A requirement that labels be visible on containers of non-hazardous waste is not clear in WM-SOP-760.

Opportunities for Improvement:

1. At some point, consider expanding management observation program to include environment if it does not dilute the safety focus (and include awareness examples in training.)

2. Many office printers are not capable of printing double-sided copies, and networked printers are not automatically set to double side.

3. Black/brown goo came out of several safety shower drain pipes at NSLS I. Note: A similar material (believed to be iron-reducing bacterial deposits that slough off when the drain is used) was also found in the domestic water line going into NSLS I cooling system, and is being analyzed. Water coming out of the eyewash itself appeared to be clear. Note: There is an air gap between where the water goes down and where fresh water comes out.

Noteworthy Practices:

REQUIREMENTS:

1. There is a section addressing Offsite work in Work Planning and Control for Experiments and Operations Subject Area. This procedure describes a graded approach to work planning /BNL review based on the type of offsite facility. For example, BNL staff working at other DOE facilities are to use the host site's work planning and control process. The procedure also reminds staff that BNL resources are available to assist with of site work planning/control.

2. Scientific experts and environmental staff team with other to develop approaches and controls (e.g., for nanomaterials and mercury contamination.)

REVIEWS:

3. An auditor observed a robust Experimental Safety Review process (good dialogue, thorough review) in CFN. with strong participation from the ECR, ESH Coordinator, Safety Rep, and Principal Investigator. In EENS, the Chair also participates.

4. A preventive maintenance/inspection program was instituted in Plant Engineering for hydraulic equipment brought onsite by contractors. One manager noted that, as a result, "*contractors don't send crappy equipment to BNL anymore.*"

5. A thorough environmental review was conducted of NSLS II design.

6. The Occupational Medicine Clinic updates their process assessment for Medical X-rays annually, and trends waste generation.

TOOLS:

7. NSLS I has summarized nanomaterial requirements in a concise format. EENS has developed a self-assessment checklist for nanomaterial requirements. (Consider incorporating both into the Subject Area as guidelines/tools.)

8. Physics maintains an electronic map showing rooms with satellite accumulation areas and 90-day accumulation areas.

9. Physics maintains Experimental Safety Reviews electronically (online).

CONTROLS AND PROGRAMS TO REDUCE ENVIRONMENTAL IMPACT:

10. Despite the unknowns, BNL has put proactive nanomaterials controls in place to collect and manage wastewater and to direct air through HEPA filters.

11. Additional air emission controls were put in place to minimize emissions from BLIP.

12. Several new buildings (RSB and CFN [735]) will be LEED (silver) certified.

13. Chemistry has set up a chemical redistribution service that reduces waste and chemical purchasing costs.

14. Invasive Phragmites (Common Reed) along the Peconic is being controlled.

EXISTING PROCEDURES AND DOCUMENTATION REVIEWED:

- SBMS Subject Area, Work Planning and Control for Experiments and Operations, Rev.4.3, 10/2/07
- SBMS Subject Area, Environmental Monitoring, 03/99
- SBMS Subject Area, Hazardous Waste Management, 01/30/08
- LS Work Permit #DJ-2008-01 (general machine shop operations)
- MOU between Physics and CMP/MS, 12/11/07
- Work Planning and Control for Experiments and Operations subject area, effective date 10/02/07
- Hazardous Waste Management subject area, effective date 1/30/08
- Liquid Effluents subject area, effective date 3/02/06
- Non-radioactive Airborne Emissions subject area, effective date 2/21/07
- Establishing and Implementing Operational Controls procedure, effective date 5/08/01
- Community Involvement and Communications in Laboratory Decision-Making subject area, effective date 7/20/06
- CFN ESR NC-2008-1-ELM
- Interim Procedure 2006-001, Approach to Nanomaterial ESH, 7/31/07
- BNL Termination of Employment Check Out Sheet, BNL F 2713F
- Email from Bob DiNardo to Instrumentation staff regarding Activity Safety Review updates (2/14/08)
- EENS list of Tier 1 findings with words "sample" in them, Q-JM_Sample, 02/13/08
- List of EENS Active ESRs,
- Inspection of ES&H Programs at BNL, Corrective Action Plan, Rev.0, 01/11/08
- Waste Management Procedure inspection form, BNL, RCRA and Safety Inspections at WM Facilities, Procedure No. WM-SOP-760, Rev.10, 02/08/08
- Pollution Prevention Fact Sheet, DOE, BNL, Safety Solution, 02/14/08

- ATS Report, Assessment 4039, Nanomaterial ESH
- Work Planning & Control Management System, FY08 Objectives, Monitoring an Assessment Plan, Rev.7
- Operation of Nano-material Hood in Room 1-128, LS-ESH-0051, Rev.1, 10/01/07
- NSLS Nano-science Safety Requirements LS-PRM 1.3.5a Section 7, Effective Date 10/31/07
- Appendix A: FY 2007 Institutional Level DOE and third-party Review/Assessment Schedule

Suggested lines of inquiry in future assessments: Evaluate operational controls for natural resource usage, environmental noise and cultural resources.

Environmental Management System Model			**IMPLEMENTATION AND OPERATION**	
ELEMENT:	4.4.7	**TITLE:**	*Emergency Preparedness and Response*	**Assessor**: Skipper/Zimmerman

ISO 14001 STANDARD:	**YES**	**PARTIAL**	**NO**
The organization shall establish, **implement** and maintain a procedure(s) to identify potential for and respond to accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them.	X		
The organization shall review and revise, where necessary, its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergency situations.	X		
The organization shall also periodically test such procedures where practicable.	X		

IMPLEMENTATION OF STANDARD:

Conclusion: The BNL emergency preparedness and response program meets the ISO 14001:2004 requirements. As described below, there were several observations and opportunities for improvement noted related to facility specific hazards/potential emergencies. Discussions with BNL staff indicate that there is not a credible emergency scenario that could pose an offsite risk. Note: BNL is in the process of reevaluating and reorganizing some emergency preparedness/response functions, which should provide additional resources needed in this area.

Discussion: The Emergency Preparedness and Emergency Response Management System Descriptions describe the programs established and maintained for identifying and responding to accidents and emergency situations. The related Emergency Preparedness and Spill Response Subject Areas provide staff with the instructions on how to respond to an environmental emergency. The Investigation of Incidents, Accidents, and Injuries Subject Area describes the process for performing an investigation to identify the causes and corrective actions necessary to prevent an environmental release from recurring.

The Emergency Management Services organization has performed Hazards Assessments to identify potential emergency situations. An annual emergency response exercise is performed, and a critique (see the Critiques Subject Area) is performed to assess performance and identify lessons learned.

Emergency Response and/or other related procedures are updated, as necessary, based on lessons learned during the exercise. The BNL Emergency Plan and Standard Operating Procedures Manual describe and document these processes. Internal procedures that specifically address the ISO requirements are:

- SOP 5.4 Notification of SARA/CERCLA Chemical Releases
- SOP 13.1 Drills/Exercise Preparation and Conduct
- SOP 13.2 Emergency Planning Corrective Action Tracking System

Departments/Divisions develop Local Emergency Plans. The Emergency Preparedness Subject Area contains requirements for these plans. All Local Emergency Plans reviewed during the assessment were up to date. The Oil/Chemical Spill Emergency Response at BNL, RCP-SOP-202 was revised in 2007 to clarify records management, ensure that ES&H hazards are properly addressed through work planning, added vegetable and synthetic oil to definition of oil, a condition to review to the Facility response Plan for larger oil spills, etc.

Some operating procedures for processes with potential for spills do address spill response specifics, such as the Occupational Medicine X-ray procedure, The Sr-90 groundwater treatment system housed at Building 855 presents the opportunity for a spill

(within a contained area) of contaminated groundwater, as the treatment vessels have a number of fittings. The technical point of contact indicated that any leakage or spillage would be vacuumed up with a dedicated shop vacuum and replaced into the treatment system, but the procedure (EM-SOP-308) did not describe this process. The shop vacuum and the air compressor are not labeled as being for use only for this treatment system. Since this building houses other chemicals and waste, it would seem prudent to take measures to ensure that the shop vac (which could contain radioactively contaminated groundwater if not immediately emptied after use) would not be inadvertently used elsewhere in the event of an emergency. Also, the procedure should indicate how the shop vac filters are to be managed when they are changed out.

NSLS I has emergency eyewash stations and showers. There are no floor drains in the vicinity of some of them. If an employee were contaminated with chemicals, they would be required to shower for 15 minutes. At 20 gallons per minute, 300 gallons of contaminated wash water would be generated (6 gallons from an emergency eyewash station.) How to manage or disposition this wash water had not been considered, although if it did get into a drain, the Sewage Treatment Plan effluent could be diverted from entering the river. The roll around vacuum carts (Zamboni) only hold 10-25 gallons each. After discussions with NSLS I, they are looking into the feasibility and need to plan for collection in drums or shop vacuums.

Several drills have been held with environmental consequences. For example, F&O conducted a drill in FY08 associated with the release of oil stored in tank near the Steam Plant. R&D organization drills have been more focused on evacuation of facilities and shut down of equipment. No emergency response drills for the HFBR or BGRR remediation activities have been conducted yet, but they are being planned. The Environmental Remediation Program is drafting procedures now for the HFBR Reactor Fill and Drain operation, and management determined that the draft procedure contained inadequate specifics on spill response, and is requiring revisions.

BNL has a Wildlife Fire Management Plan which was developed in 2003, and is due for review in 2008.

Observations:

1. The Sr-90 groundwater treatment system procedure (EM-SOP-308) does not address spills.

2. NSLS I has not considered containing/collecting potential 350 gallons of contaminated wash water that would be generated from one use of emergency shower.

Opportunity for Improvement:

- Label Sr-90 shop vac and compressor in Building 855, and indicate in procedure how waste shop vac filters should be managed.

Noteworthy Practices:

1. NSLS I has held good drills with environmental consequences, with good lessons learned.

2. Life Sciences has developed an electronic fire alarm/drill report which provides for corrective action tracking. Consider for Lab-wide use.

EXISTING PROCEDURES AND DOCUMENTATION REVIEWED:

- SBMS Subject Area, Emergency Preparedness, Rev. 3.5, 05/15/03
- SBMS Subject Area, Spill Response, Rev. 3.6, 10/16/07
- SBMS Subject Area, Investigation of Incidents, Accidents, and Injuries, Rev.2.3, 07/11/05
- ERP-WP-2.24 draft, HFBR Reactor Fill and Drain
- SOP 5.4 Notification of SARA/CERCLA Chemical Releases
- SOP 13.1 Drills/Exercise Preparation and Conduct
- SOP 13.2 Emergency Planning Corrective Action Tracking System
- Wildland Fire Management Plan for BNL, BNL-71629-2003, 09/22/03
- ESH&Q Directorate, Regulatory Compliance Procedure, Oil/Chemical Spill Emergency Response at BNL, RCP-SOP-202, Rev.3, 01/25/07
- Event Analysis, Acetonitrile Spill at the NSLS, 07/28/06
- EM-SOP-308, 11/20/07
- QA and Conduct of Ops, Assessment of NSLS (Blg. 725) Evacuation Drill, 12/23/03

AUDIT PROCESS

During the internal audit, interviewees were extremely cooperative and helpful. Turnaround on documents or information requested was speedy. Some items of concern were corrected the same day they were noted.

In terms of process improvements for future assessments, ready access to the Intranet (to review SBMS and internal operating procedures during the desk audit and while onsite) would be helpful. Also, auditors should consider requesting a list of projects to select some with significant aspects for review.

PERSONNEL INTERVIEWED:

J. Adams, LS ECR
R. Angona, Instrumentation Plating Process
L. Bates, F&O ALD
D. Bauer, BES ECR
J. Bullis, LS Staff Member
D. Cabelli, Chemistry ESH
W. Chaloupka, F&O EMS Rep
R. Colichio, LS ESH Manager
R. DiNardo, Instrumentation EMS Rep
A. Emrick, LS EMS Rep
S. Ferrone, F&O ECR
R. Gill, Physics EMS Rep
P. Guida, LS NASA Liaison
W. Gunther, Special Assistant to LS ALD
H. Hansen, Instrumentation Plating Process
C. Harris, LS Building Manager
R. Hu, CMP and MS Researcher
J. Hynan, F&O
R. Izzo, F&O Sewage Treatment Facility
C. Johnson, LS Bldg Manager
R. Karol, C-AD ESSHQ Division Head
C. LaSalla, F&O Emergency Services
E. Lessard, C-AD Associate Chair for ESSHQ
Q. Li, CMP and MS Researcher
W. Litzke, BES SHSD Representative
J. Misewich, BES ALD
A. Moodenbaugh, CMP and MS Researcher
G. Olsen, WM Rep for F&O
J. Patete, CMP and MS Researcher
A. Piper, CFN Building Mgr
M. Rankine, Instrumentation Safety and Health Rep
R. Sabatini, CMP and MS ESH
J. Scott, C-AD/SMD ESHQ
E. Simon, F&O Central Steam Facility
P. Sreearunothai, Chemistry Researcher
J. Taylor, Special Assistant to BES ALD
M. Van Essendelft, C-AD/SMD ECR

ATTENDANCE AT INBRIEF (OPENING MEETING):
S. Stein, QMO
R. Lebel, QMO
C. Wirick, EENS
K. Fox, ALKD
R. Costa, DF
S. Ferrone, ES
J. Canestro, QMO
A. Bou, ES
R. Lee, ES
M. Israel, IA
T. Schlagel, AO
J. Granzen, DOE
J. Taylor, BES
M. Davis, EWMS
F. ???, LS
A. ???, LS
P. Looney, PSP
J. Wilkey, QMO
R. Sabatini, CMPMSD
J. Selva, ES

ATTENDANCE AT OUTBRIEF (CLOSING MEETING):
S Stein, QMO
C. Wirick, EENS
E. Lessard, C-AD
K. Fox, DF
K. Orta, QMO
A. Bou, ES
J. Wilke, QMO
M. Vanessendelft, ES
J. Selva, ES
B. Schwaner, T&Q
J. Granzen, DOE
M. McCann, LO
M. Rankine, IO
R. Dinardo, IO
P. Looney, DP
C. Harris, MO
S. Ferrone, ES
P. Carr, EENS
D. Bauer, ES
J. Taylor, BES
A. Ackerman, NSLS
R. Costa, DF
R. Colichio, DJ
T. Schlagel, AO
C. Parnell, DH
J. Adams, ES
M. Davis, ES
P. Bond, DO
R. Karol, C-AD
R. Lebel, QMO
M. Buckley, NSLS
P. Williams, HP

D. Gibbs, DO
K. Geiger, CEGPA
R. Sabatini, CMPSMSD
C. Anderson, BO
A. Emerick, BO

CATEGORIZATION OF FINDINGS:

- **Nonconformity**: Objective evidence exists that a requirement has not been addressed (intent), a practice differs from the defined system (implementation) or the system is not effective (effectiveness).
  - **Major nonconformity**: A system element is missing, or there is evidence that a system element is not implemented or not effective. Multiple minor nonconformities may be grouped together as a major if they are all examples of the same type of nonconformity.
  - **Minor nonconformity:** A single observed discrepancy in the system, with evidence that the overall system is defined, implemented, and effective.
- **Observation:** Not a nonconformity, but something that could lead to a nonconformity if allowed to continue uncorrected, or an existing condition without adequate supporting evidence to verify that it constitutes a nonconformity.
- **Opportunity for Improvement/Recommendation**: A suggested means of accomplishing an activity, fulfilling the intent of a procedural requirement, or improving the efficiency or effectiveness of the EMS. It is not a nonconformity or observation. A recommendation involves an element that meets the minimum ISO 14001 requirements, but could bring that element of the EMS to the next level, as part of continual improvement.
- **Noteworthy Practice**: Performance that exceeds expectations in terms of efficiency and/or effectiveness and provides a model for others to follow. A noteworthy practice is a positive condition or strength.

The suggested next step is to review the report, prioritize the findings, and develop a strategy for addressing them, and track them in a system. Follow up on Nonconformities and Observations that have not already been adequately addressed is expected. **Note that corrective action shall be applied to the identified concern/issue. Preventive action shall be extended to all areas where similar nonconformities may exist and as applicable.**